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INDUSTRIAL ANILIN POISONING IN MASSACHUSETTS.

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THE manufacture of anilin in this country is one of the direct results upon industry produced by the war. In many parts of the United States new industrial plants have sprung up and many old ones have been wholly transformed in order to meet the demands for anilin and substances closely allied to it, that were formerly supplied almost wholly from Germany. Of necessity, the problem of production of material superseded that of protection to the workman. Added to this was the fact that very few physicians in this country had had sufficient experience with the anilin industry to recognize poisoning by that substance. Happily, much of this unpreparedness, both in manufacturing and in medicine, has now been overcome, and anilin poisoning is today a well-recognized industrial hazard, both in the chemical industry and in many manufacturing processes where preparations of anilin are employed.

In Massachusetts the various industries have given to the department of labor and industries a sufficiently large number of cases of industrial anilin poisoning to serve as a basis of presenting to the medical profession a brief digest of the nature, the symptoms, and the consequences of poisoning by this important and useful substance.

Properties. Anilin (amidobenzene—$C_6H_5NH_2$) also known as anilin oil, is a colorless fluid, which upon exposure to light and air gradually becomes dark in color. It has an aromatic odor and only slight local irritating effect. It volatilizes at room temperature; its boiling point is high—182 degrees Centigrade.

Manufacture. The manufacture of anilin starts with coal tar, which is a mixture of benzene (C_6H_6), toluene, xylene, etc., all of which are volatile poisons and responsible for a large number of fatal industrial cases recorded in literature. Benzene is treated with nitric and sulphuric acids to form nitro-benzene ($C_6H_5NO_2$), a poison having a mortality of from 30 to 40%; nitro-benzene is reduced by means of iron filings and hydrochloric acid to anilin. The most important colors are made by the action of nitrous acid on anilin and the allied aromatic amins, thus there are opportunities for industrial poisoning from benzene,

nitrobenzene and anilin, as well as from a multitude of similar bodies used or produced in the various processes, *e.g.*, nitrophenols, nitrochlorbenzens, and the naphthylamins. The use of wood alcohol as a reagent adds to the industrial hazard.

Toxicity. Pure anilin does not cause poisoning; but pure anilin is not used in industry. What is usually known as anilin is a mixture of anilin (amido benzezne) with meta-toluidin, paratoluidin and ortho-tolnidin and xylidin in varying proportions.

Poisoning may occur in the manufacturing of anilin and its derivatives, *e.g.*, anilin dyes, pharmaceutical preparations, photographic materials, etc., as well as in dyeing establishments and rubber industries.

The poison may be absorbed: (*a*) through the unbroken skin (the usual method of poisoning), by direct contact, or from saturated clothing; (*b*) by the inhalation of vapors and impalpable dust; or (*c*) by the swallowing of dust with food or saliva.

The para compounds are more poisonous than the ortho and meta compounds. In a general way, the basic dyes are more poisonous than the acid dyes. This is especially true with such dyes as saffron yellow, anilin orange. Manchester yellow, the aurantia, corbulin, fast black, and Bismark blue. The anilin dyestuffs are, as a rule, non-poisonous, while the alpha and the aryl compounds of anilin, like their homologues, are all especially poisonous.

The warning given by most volatile poisons (irritation of the eyes and throat) is wanting in anilin poisoning. Yet anilin is toxic in even smaller doses than benzene, chloroform, or carbon disulphide. Toxic symptoms follow the inhalation of from 0.1 to 0.25 grams of anilin, while it takes from 1 to 1.1 grams of carbon disulphide to produce symptoms of poisoning. A case recorded in literature states that anilin poisoning occurred in a boy who slept with an elder brother who, just before going to bed, had rubbed anilin on frost-bitten fingers. The toxic action of anilin is more pronounced in warm, moist workrooms and during hot, sultry weather.

Uses. Anilin is used for the manufacture of diphenylamine (used in smokeless powder works), for the manufacture of tetryl, and for the explosive tetranitranilin, or T.N.A.; also used in the manufacture of anilin dyes, photographic materials, colored phenols, and explosives, as well as an aid and an accelerator in vulcanizing and in tire building. It is also used extensively for coloring in the liberal arts, and in cotton printing in the textile industry.

Symptoms. Anilin is primarily toxic to the nervous system and red blood corpuscles (destruction). The symptoms may vary with the compounds used, as well as with the personal susceptibility of the worker. Many observers contend that blondes are more susceptible than brunettes, and young persons more susceptible than persons of middle age, especially to acute violent anilin poisoning.

Poisoning may take place from absorption through the unbroken skin by direct contact (including saturated working clothes), through the digestive system (dust swallowed), and through the respiratory system (fumes inhaled). It may affect the cardiovascular system, the genito-urinary system, the muscular system, as well as the eyes and ears.

The first symptom of anilin poisoning is pallor, which soon changes to a striking bluish color, especially in the lips, that gives to the worker the name "blue man" or "blue boys." Weariness, sleepiness, flushing of the face, a sense of fullness in the head, slight mental confusion, dryness of throat and difficulty in swallowing, soon develop, with a weak and rapid pulse, subnormal temperature, intense headache, dizziness, nausea, dyspnea, increased mental confusion, loss of consciousness, convulsions, coma and death.

Mild cases of anilin poisoning may exhibit pallor of the skin and mucous membrane, with slight cyanosis; a feeling of weariness and weakness, with vertigo, reeling and unsteady gait. These workers show lack of elasticity of movement, slow labored speech, irritability (anilin "pipp"), and a condition resembling inebriation (loquacity, gayety, and defective power of orientation). Later there is a loss of appetite, constipation, and tense rapid pulse. If the poisoning goes on or if the intoxication is more severe, the worker develops a swarthy, dark blue cyanosis, with a bounding pulse and symptoms of metahemoglobin, resulting in "air hunger," due to the destruction of the red corpuscles, viz., frequency of respiration, lowering of sensibility, obliteration of reflexes, vomiting, strangury and bloody urine.

In cases even more severe there is sudden prostration, cold pale skin, blue lips, nose and ears, lowered or even lost sensibility, small

pulse and death in a comatose condition, often preceded by convulsions.

Subacute and chronic poisoning by anilin is manifested by anemia, slowness of the pulse, disorder of digestion (eructations, vomiting, diarrhea, dislike for food), headache, ringing in the ears, vertigo, disturbance of the sensibility, and often of motility, spasmodic muscular pains. There is commonly an eczematous and pustular eruption on various parts of the body, especially on the scrotum.

One of the characteristic manifestations of poisoning by benzene derivatives is more or less typical of anilin, namely, the delayed onset of serious symptoms after exposure, at times not occurring until some hours after the worker has left the poisonous atmosphere. Many German authorities refer to the frequency with which tumors of the bladder (adenomatous or carcinomatous) occur among anilin workers, supposed to be caused by anilin products of decomposition excreted by the bladder. Recovery in mild cases is prompt, the worker returning to work after a brief spell in the outer air or usually on the next day. The cyanosis often persists for several days more. Some workers establish a tolerance for the poison and do not suffer a second attack; the reverse is, however, the rule, and an acute attack is more apt to make the worker more susceptible.

The blood changes produced by anilin are characteristic. It is turbid and brownish, which shows a spectroscope band that comes quite close to that of metahemoglobin. There is a transient leucocytosis from 30,000 to 40,000, and both the circulating blood and the bone marrow show evidence of efforts toward regeneration of the red cells (megaloblasts, nucleated reds, and basophilic granules). Small repeated doses of anilin produce an increase in the number of red corpuscles with loss of hemoglobin, low color index, degeneration, and imperfect regeneration of red corpuscles, decrease in polymorphous leucocytes, and increase of lymphocytes.

Blood examination is one of the most reliable means for diagnosing anilin poisoning, especially in chronic cases. A fall of 15 to 20% in hemoglobin estimate suggests poisoning, especially if accompanied with stippled cells. Later hemoglobin in the urine is characteristic; the rapid pulse of low tension, dyspnea, and odor of anilin in breath, even before cyanosis or dark-colored urine has developed, confirm anilism.

Treatment. The first aid treatment of cases of anilin poisoning consists in the removal of the worker to fresh air and keeping him awake. If possible, oxygen inhalations, pulmotor, and heart stimulants, especially black coffee and camphorated oil. Sponging with acetic acid (or vinegar) or ammonia acetate is helpful Warm saline solutions should be given, hypodermoclysis, and by rectal injections, and by direct venous transfusion if pulse is not too weak.

The preventive measures include adequate ventilation; the removal of dust and fumes; the substitution of closed nitration method for the more open one commonly employed; wet or vacuum sweeping in place of dry sweeping; adequate washing facilities; protection of the skin (gloves, long sleeves and special work clothes) against skin absorption; respirators, prohibition against eating in workrooms where anilin is manufactured, used or stored; and, lastly, instruction to workmen as to the danger and early signs of anilin poisoning. Even when all these protective measures are carefully carried out, the necessity of periodic blood examinations and constant medical supervision promises the surest protection to workers.

The following cases of industrial anilin poisoning taken from the records of the State Board of Labor and Industries in Massachusetts are typical of different manifestations of that hazard:

Case 1. A man, white, 36 years of age, employed in making automobile tires for a period of one month, while lowering a cask of anilin oil onto skids spattered some of the oil onto his clothing. He was instructed to change his clothing, which he refused to do. Three hours later he was seized with headache, vertigo, slight tremor, disturbance of gait, marked cyanosis, chills, contracted pupils, weak rapid pulse (124). He was removed to the open air and first aid treatment applied. He was able to return to work three days later, but on account of shortness of breath, dyspnea, muscular weakness and lack of strength was unable to continue work at his former occupation.

Case 2. A man, white, 34 years of age, employed for a period of seven months as a general laborer in a rubber factory making auto tires, at the end of a shift, threw his working clothes onto the floor behind the oil box. On

resuming work the following night his work clothes were well saturated with anilin oil. He made an effort to wash off the oil and then wore the wet clothes. His work began at 11.00 p.m. At 3.50 a.m., he had a slight convulsion, and at 5.00 a.m. a more severe one, with headache, vertigo, pronounced cyanosis, general weakness, dyspnea, and a pulse of 100. He was given first aid treatment and removed to his home, where he was confined to the house on account of general weakness, nervousness, mental confusion, and loss of power for a period of two weeks, and has not been able to return to his former occupation.

CASE 3. A man, 40 years of age, white, employed as a mill helper in a rubber factory, began work on a night shift, starting at 11.00 p.m. His overalls had become soaked with anilin oil and three hours later he was seized with a vertigo, blurred vision, marked abdominal pain (colic), cyanosis, dyspnea, general weakness, a weak pulse, rate 84. First aid was administered and the man removed to his home He had a tingling sensation of the feet which persisted for more than twelve days after the acute attack. The man was not permitted to return to his former occupation.

CASE 4. A man, 30 years of age, white, employed as a rubber mixer for the past six months, where his duties consisted of mixing anilin into batches of rubber mixture. Ventilation is perfect in this department, and all anilin is confined in closed vessels. In the process of manufacture anilin is fed into the batch of rubber from an automatic sprinkling can. The only opportunity for poisoning consists in spilling the solution onto the hands or by inhaling it from the hot rolls in the milling process. This man complained of nausea, accompanied by dizziness and headache, and was obliged to give up work for treatment. He returned to work the following day and again experienced the same symptoms. After two days' rest he returned again to work, when he was seized with vertigo, headache, nausea, cyanosis, and had a pulse of 110. After recovery, he was transferred to an outside job.

CASE 5. A man, 56 years of age, white, employed as an oil tank tender, giving out anilin oil to the workmen on the mixing machines in a rubber establishment, was overcome with dizziness, vertigo, headache, shortness of breath, and cyanosis. He was taken to the outer air, and after a short time recovered sufficiently to return to work. Later in the forenoon he developed marked cyanosis of face and hands, nausea and intestinal colic. He went home and returned later in the day to finish the day's work. Dizziness and mental confusion and unsteadiness developed, and in an effort to reach the outer air he fell unconscious in the passageway, where he was discovered later by a fellow workman. First aid treatment was administered and the man removed to his home later, where he was confined for three weeks, unable to return to work.

An examination of his clothes did not show any evidence of anilin staining, neither did his hands, nor gloves, nor arms show any evidence of anilin at the time of his acute attack. He states that the odor of anilin nauseated him on beginning work on the day of his illness, but as he had a similar attack two years before, he attempted to work out the day. From the evidence at hand, it would appear that this was a case of acute poisoning by inhalation.

CASE 6. A man, 50 years of age, white, employed in the chemical department, where his duties consist in tending to the boiling of a mixture, the batch of which is anilin oil. During the day the man complained of dizziness, palpitation of the heart, and contraction of the muscles of the throat, and was observed by a fellow workman to become cyanotic and deeply purple; before he could be warned he became unconscious and fell at the machine. Diagnosis of acute anilin poisoning made. The man was incapacitated for three weeks.

CASE 7. A man, 32 years of age, white, employed as mill hand in a rubber factory for more than a year. His duties consisted in mixing crude rubber with other chemicals to which anilin oil is added. This oil is poured from a container or can with a handle and an uncovered mouth similar to that of a milk can, and in pouring the oil into the hot rubber mixture considerable fumes are given off.

The machine is well hooded, but this man was observed to place his head under the hood after pouring anilin oil into the mixture, thus getting considerable fumes from the inhaling. Two hours later he complained of feeling sick, headache developed, marked cyanosis, shortness of breath and general weakness. He had profuse perspiration and complained of intense headache. He was removed to the outer air and first aid treatment resulted in complete re-

covery. Marked muscular weakness resulted in an incapacity of one week.

Case 8. A man, 35 years of age, employed as a general laborer in the compounding room in a rubber establishment, developed marked dermatitis of hands and face. His work consisted in handling the different ingredients that go to make up rubber tires, and had disobeyed orders relative to the wearing of gloves. This case occurred during July, a very hot, humid day.

Case 9. A woman, 44 years of age, employed in dressing tan shoes in a shoe factory, developed a marked eruption of the arms, neck, and body. Investigation showed marked tremor of hands and speech, both wrists showing a dermatitis, also the dermatitis of the arms and neck. The preparation being used contained anilin dye. Although this woman wore rubber gloves, she frequently removed the same, and had a habit of rubbing the glove across the face, the site of the skin irritation.

Case 10. A man, 47 years of age, employed as a kettle hand in a dye house, developed marked dermatitis of both hands from handling cloth wet with dyestuffs. Examination showed the dyestuffs to be fast black with anilin ingredients.

Case 11. A man, 36 years of age, white, employed as a laborer in a dyestuff establishment, was overcome by anilin fumes while working over a vat containing meta-nitraniline, which was not covered. He remained until the close of the shift, and went home without assistance. Later in the night he became cyanotic, nauseated, convulsions and coma. First-aid treatment given, recovery resulting, with much loss of muscular power and marked nervous debility. He was not able to return to his former occupation.

INFANT MORTALITY: THEORY AND RESULTS.

By D. M. Lewis, M.D., New Haven, Conn.

The fact that proportionate results based on the present-day educational theory are not as great as those that may be gained otherwise is a not unimportant matter for discussion at any time. Why this is so is not difficult to show.

It is theory that death certificates show that 25% die of diarrhea and enteritis, 15% from respiratory disease, 8% from communicable diseases, 31% from congenital malformation and debility, while from all other causes not susceptible of much analysis, 21% die. Of the latter there is stated to be doubtless a small number of preventable deaths. There looms predominant the first and third percentages. It is then reasoned that the vast and unmeasured loss of infant life is due solely to individual and civic neglect, the factors of which are ignorance and poverty, bad housing, poor midwifery and obstetrics, dirt, poor milk and other allied conditions. On such principles antenatal care of mothers should produce stronger babies, and the direction of care of the first month of life especially should be devoted to keeping well babies well. Inasmuch as it is stated to be a fact that summer is the season when the greatest number of babies die and there is a greater amount of sickness among them at that time, the keeping of babies strong is solely through the relation of food, namely, milk. The problem then centers on milk station summer work, together with the year-round educational prenatal work of either civic workers or municipal nurses. Results expressed in terms of deaths per 1000 babies born are then available for comparison.

To one studying the subject as a medical problem, there are several fundamental errors which have evident need for elicitation. One that has never been brought out is the fallacy of expressing the sum of the results in terms of death per 1000 births only. It is stated that is is possible for, and the goal of every community should be, a rate under 50. Brookline, Mass., with a rate of 43, has an "honor rate"; Lynn, in the same State, one of 77; Paterson, New Jersey, one of 81, as also has New Haven. If now we know that for the year when these rates held (1917) there was a birth rate for these communities of 15, 21, 25 and 36 respectively, there is opened up a very tangible something. It becomes one of the fundamentals of ability to obtain results. New Haven, of the four communities, has the best record—not race suicide as expressed by Brookline, not a goal that should be striven for—for we have two and one-half the number of children born and less than twice the deaths. The same holds true to a lesser degree with the other communities.

A second error is found if we question whether there are more babies die during the summer. Whether the small community or

the large, the sum total of the deaths during the first six months not only may equal the latter six, but frequently are in excess; further, the same relation exists between the first quarter and the third. What makes any difference between these, and why the second quarter may be much greater than the fourth quarter, are pertinent to the subject later on.

A third error is the listing of percentages in terms of death certificates subject only to the office investigation. If we separate the deaths under age one week, we find that one-third more such die in the first half year; that during the third quarter least of all die; that the large monthly deaths are not proportionate to the total monthly births, but are proportionate to the general respiratory disease curve, month by month, in general. The remainder over age one week, for the first two and the last quarter show upwards of 75% dying from acute infections, predominantly respiratory, while the third quarter shows the predominant gastro-intestinal diagnoses. Further, if we examine the social conditions, not in the office but in the field, we find that the greater predominance of premature deaths are not a constant having poverty and general lack of attention. There are two facts which have a bearing as being possibilities; first, the only occasional, it is true, hospital diagnosis of acute infection, with secondly the increasing number of reported cases of placental demonstrated infections not previously suspected from the usual history and examination of the mother. Single isolated ones, involving the demonstration of pneumococcal septicemia of the premature have been found by the inquiring individual, not content with merely premature. If we study the approximately two-thirds available death certificates which show place of residence, in the deaths over one week and under one year, in terms of previous, prevailing and future illnesses in the family and their immediate friends, there is very tangible evidence that the predominance of the debility of the 31% and of the 21% of obscure causes can be properly placed. If one has had considerable experience with infants and, knowing that even the average one has some power of resistance, will look for minor defects, or if that individual merely examines every child in the family where one has a minor complaint which keeps that one at home though not under medical attention, there will be forced on the observer, monthly and yearly, that there is one very definite something to be seen. It is an amazing unappreciated evidence of minor grade respiratory recurring inflammation of nose and throat of these small individuals. With hypertrophied tonsils, subacute and chronic rhinitis, isolated cervical gland enlargement and not infrequent otitis media in infants of three weeks and over, even under three weeks, we have that definite something which both explains and may be explained. It explains the frequency of school period present-day deformities. It explains the frequency of later adult life. It explains the variation in regional rates and their exact variations of respiratory morbidity; the high pneumonia rates of the New England coast and the Lake regions as contrasted with the less variable climate of the interior cities. It is explained by the very real consideration of birth rates. The rates for mortality are measured by that population, as we have frequently shown, who are unappreciative of minor respiratory troubles, living in a climate which is more provocative of such troubles. To my knowledge there is on record but one confirmation of these demonstrable factors. The Tuberculosis League of Pittsburgh, taking a restricted eight city blocks, concentrated on prophylactic clinics and treatments for infants with slight ailments such as noses and ears with discharges. The work, continued over a period of one year, gave a 43 per thousand diminution in death rate over the whole ward. Parenthetically, the "paternalistic methods" caused the abandonment of an intended fifteen-year experiment. A most unusual observation for the period was one made in this city in 1886 by the health officer, Dr. C. A. Lindsley. It was as follows: Of 42 deaths from infant diarrhea in July, 40 houses were implicated. Of the latter, 30 had office records that all but 2 had privy vaults. Of the 2 one had 34 residents, the other had 12. During August there were 32 deaths. Of the 28 premises inspected, 27 had privy vaults, while the remaining one had 15 families resident. His conclusion was "the most obvious and positive inference which these facts teach is that infant diarrhea is limited to those who are exposed to inhalations of human excrement collected in masses in the ground; that the larger proportion of the populace not so exposed are exempt from these intestinal disorders in a fatal form."

Transformed to present-day explanation of Hazen's theorem, this observation becomes definite human infection.

A high death rate of prematures must then be demonstrated from its higher seasonal curves proportionate to respiratory frequence not to be due to that factor directly or indirectly through the mother or examiner. High rates from that age up to that of one year must similarly be demonstrated not to be so due. And in reverse, there should be shown, as stated in our premise, that there are results to be obtained from such a standpoint in excess of the so-called standard.

What results demonstrate from sufficient time-period with accompanying facts that infections are the dominant problem? The statistics of Richmond, Va., have demonstrated for the past four years that infant welfare directed solely against diarrheas as infectious and communicable cut their previous rates under standard welfare work in half, with a corresponding lowering of infant mortality; their curves during that period were in terms of respiratory frequence, as whooping cough, etc. I have shown that a similar reduction has been held for this city for over ten years in terms of providing non-infected milk; that the yearly variations are those of respiratory frequence. I believe I am accurate in stating that no other city in the country has similarly cut in half immediately on adoption of a procedure, their rate. Further, it is demonstrable that all other cities that we have record of show the factor of respiratory frequence in their curves, which in itself then becomes a result, if not a proof. In a previous paper,[1] I showed the curves of the three largest cities in the State for a period of sixteen years. Taking the specific rates for 1917 for Hartford, Bridgeport and New Haven as 103, 90 and 81, respectively, we base comparison on the fact that all had a birth rate of 35 or over. Proportionate to the increased rate for diarrheal diseases under age 2, of total deaths under age 5, and of total communicable diseases, Hartford had a rate in excess over 1916. Specifically, Hartford had an epidemic of meningitis. Bridgeport had a decrease over 1916 proportionate to the decrease for all other rates mentioned. Bridgeport had no specific epidemic or frequency of respiratory disease. New Haven had a decrease over 1916 in excess of the decrease in the other rates. With a measles epidemic exacting more lives than any epidemic since 1906, although there were three since that year, with the recognition that measles was a blessing in disguise for the making of nasal carriers of other diseases as well, a special drive was made against respiratory carriers. The result was not only decreased rates for total communicable diseases, total deaths under age 5, diarrheas under 2, as well as the excess of decrease for infant mortality, but the same was in opposition to the increased rates for all similar conditions during each of the three measles years, as well as the maximum compared one of half of 1918 we have for the three cities, respectively, rates of 108, 100 and 94. The birth rates for the period are all approximately 15. If we state that the total deaths under age 5 were 230, 231 and 204, and compare 1917 we shall find an increase for all three cities, but greatest for Bridgeport and New Haven. With a real epidemic of whooping cough in this city, with no unusual respiratory disease incidence stated to be so in either of the other two cities, and only a moderate increase of pneumonias in all three cities over last year, the excessive increase of Bridgeport only over that of Hartford compared to last year and compared to the existing not proportionate increase of pneumonia, was not evidenced by their monthly reports. It was in evidence when the belated state reports were issued. New Haven reported in their monthly bulletins for the first five months, 23 deaths from whooping cough, where Bridgeport reported 13. The State reported for the two cities 25 and 32, respectively. No less certainly was the excess of rate in Bridgeport than in New Haven over Hartford due to respiratory disease, pneumonia and whooping cough. If now we take our neighboring metropolitan city we have their knowledge that for the first twenty-one weeks of 1918 there was a 5% increase over the previous year of deaths under age 1. Not being able to get their births, to show whether, with birth rates lower than last year, as is usual the country over, this is an increase of the mortality rate or one over deaths only, the material point is that during that period there was a weekly increase of measles and whooping cough with pneuminia over 1917 to explain the increase.

How, then, are results to be gotten. Standard methods today call for the educational lines, predominantly those of prenatal and of later care of the child in terms of feeding

Whether municipal or civic, their foundation comes from the basis of the social scientist. Gains that are made are not correlated with birth rates or with other than some one immediately previous bad year's record; increased rates are not as great as some one such year. Or an investigation is started in terms of the theorist. In a previous article,[2] I showed that excessive diarrheal disease in New York City last fall was due to whooping cough, according to their own statistics, as against the implication of milk which they had ordered investigated. Again this year, with the increase in infant mortality, that city ordered a milk investigation, although measles increase and continuance of whooping cough was clearly causal. It may be but a coincidence, but some weeks after a personal letter of protest to the department head, their bulletin of June 29 devoted two pages to the conservation of infant and child life from the standpoint of measles and whooping cough. Yet that admission, as I have shown, does not go far enough. The responsibility for the disease is left on the populace—not assumed by the board of health. In that it is the crux of the entire situation, I would again refer to a previous article.[3] When you watch 75% of preventable deaths in children, it lies not in education of mothers, but by direct investigation that is medical of all minor as well as major illnesses, of such minor investigation of ordinary as well as extraordinary head colds that the latter as specifically infected do not contaminate the former innocuous ones; of recognizing all infections as communicable and finding such ahead of reported cases; that such investigation is that of all-time health policies, no matter how ancient as long as it is inspection of individuals primarily, and not premises, and that it is routine rather than following complaints. The trained nurse, as contrasted with the sanitary inspector, from a personal knowledge can obtain, without duplication of health activities, as at present, the hitherto unappreciated data of all factors. I may express it as I have to one such:—some one is responsible when the death certificate of a preventable death is turned in. From her card an investigation reveals whether it is primary with her or with those having charge of correcting the conditions which were directly the cause, and to whom it was referred through her. And so on through the list of preventives, until it may reach, not one in the working force of the department, but an allied department, like that of charities, or possibly some civic association to whom it was referred. The active health officer has a check on every working individual of the department. Not the extreme of a death is the possibility—the daily or weekly illnesses constitute themselves such in advance. The work of one nurse working over a period of four months in the two worst districts with results, is an accurate guide to what may seem assertive. Practical experience shows it the simplicity of rationalized old public health. The isolated factor of complete birth registration is more than possible—it also is one of the functions and responsibilities of the health authorities.

Infantile mortality, then, should be and may be looked at from the standpoint of a part of true sanitary science; observations made can show the cause; experiments are made by nature and can be interpreted; unusual frequency can be foretold by its interdependence on all the factors of that science, and results may be obtained from application of the observations and experiments. If an observer records the statistics of two cities of Russia, stating that the one with a higher diarrheal infantile rate has a much higher development of infant welfare station work, we know that we shall find that that city has a much higher mortality rate for respiratory diseases. There is further confirmation when the writer states that for all Russia the seasonal differences are not as striking as might be expected, namely, 25% of infant deaths occurring during the winter, 28% during the spring, 28% during the summer, and 18% during the fall. Of equal confirmation is that 18% die during the first week, 47% from then until the sixth month, and 34% for the last half of the first year.[4] We cannot agree with the social conclusion that "Poverty and Ignorance," in an accentuated form, and in particular, the ignorance of the principles of infant feeding caused the tremendous mortality. The logical medical conclusion was that the tremendous excess of respiratory diseases, with excess measles, diphtheria and scarlet fever, interdependent, are accountable for the tremendous infant mortality; that the city with better milk station had a right to have an excess over one that was inferior, because the former city had a proportionately greater amount of respiratory disease,

as evidenced by the various diseases mentioned and listed.

In sum: the results gained in infantile mortality are accurately stated only when coincident birth rates are considered; comparisons, to be accurate, should also be in terms of similarly prevailing frequency of infections, mainly respiratory primarily. Conversely, results in excess of those laid to public education may be obtained by medical realization of its dependency as a part of sanitary science; that the present-day educational work is not only working on the shorter end, but is, from its limited point of view, not coincidently working for results in infantile diarrhea, total deaths of young children and total communicable diseases, as should be the case. To place infant mortality not only on a correct basis, but to place its responsibility correctly, means standardized responsibility of health departments as opposed to standardized methods; incidentally it also would mean the recall of advocated socialized medicine in terms of health insurance, now looked at by the same social theorists as the new public health.

REFERENCES.

[1] Prevention in Public Health. Boston Medical and Surgical Journal, April 25, 1918.
[2] Use of and Value of Statistics. *Ibid.*, April 11, 1918.
[3] The Control of Communicable Diseases. *Ibid.*, June 6, 1918.
[4] Winslow: Public Health Reports, Dec. 28, 1918.

Selected Papers.

SOME SPECIAL PROBLEMS IN ABNORMAL ADOLESCENT PSYCHOLOGY.*

By Olga L. Bridgman, Ph.D., M.D., University of San Francisco.

First, a word as to the importance of the adolescent period in the development of abnormal mental states. It is generally agreed that during this period there may be noticed for the first time marked mental abnormalities. There are several reasons for this. First of all, adolescence is an active development period, and marks as well the appearance of new traits, such as the sex interests. It is a time of great physical and mental stress, and, hence, mild peculiarities tend to loom large, and in some cases, where the abnormality has been present only as a latent tendency, the additional strain imposes so great a burden that it cannot be borne normally. Then adolescence has another importance. In poorer homes, especially those of the children likely to come before the Juvenile Court, this is the period where the relatively close supervision exercised by the public school over the child ceases, and the immature individual, usually unprepared, both economically and morally, faces the necessity of entering the industrial world, and acquires, at the same time, a freedom which he is not able to use wisely. This latter condition, added to the fact that the child is passing through a critical physical period, results in precipitating many troubles of a mental and moral kind. It may or may not be that adolescence is responsible for the appearance of many abnormal mental traits. Without attempting to settle this relationship, this brief discussion will merely concern itself with certain of the mental abnormalities which have been observed in adolescent persons.

I will attempt a rough classification of the main types of abnormal children which have come for mental examination, realizing, however, that a child seldom presents a clear picture of one type or another, and that, as a rule, very many important factors are at work to bring about any particular result.

I. First come the feeble-minded; that is, those individuals who from birth have been so defective mentally that they have never been able to compete with the normal fellows in a satisfactory way. This is the simplest group of all, and the diagnosis is never difficult. It may be considered an adolescent problem, because, in the case of the higher grade mental defects, the home and school protection usually prevent any great trouble until the time to leave school comes. Then come the difficulties. The child, unable to make normal progress, even in the protected school environment, finds himself face to face with a complex situation. In the case of the feeble-minded girl, she finds herself unable to earn enough by her work to support herself away from home. If still living at home, she finds she is her own master, and, in the absence of adequate supervision, begins to spend her evenings on the street and in dance halls and other public places. Soon she makes the acquaintance of undesirable characters, and then, even in the absence of any vicious tendency, immorality often follows. She may have no strong sex impulses, but is

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not at all averse to immoral relations as payment for pleasures. Many a girl, when asked why she acted as she did, replies naïvely, "He was awful good to me." This, too, explains why girls so often refuse to testify against the men involved with them. They have no scruples against immorality, and actually regard the men as friends, and insist that they would not do anything to hurt them. The feeble-minded girl is immoral because she cannot understand the social argument against immorality. But there is a second type of feeble-minded girl, the girl with highly developed sex impulses. As a rule, such a girl as this is the aggressor, and not only has no wish to refrain from immorality, but seeks it actively. The feeble-minded boy is a less serious problem than the girl, unless he happens to be the over-sexed type. Immorality as a profitable trade is not open to him. His most useful offence is petty thievery, which is the inevitable result when the incompetent lad has the freedom of the streets and sees opportunities to get the things which he wants, but which he cannot obtain in a legitimate way.

II. Next come the border-line cases, children with ability less than average, with demonstrable mental defects, but with enough mental capacity to float in society, except when confronted with unusual or difficult situations. It is in respect to these children that the early environment has the greatest effect. Given intelligence of a low order, and super-impose on that a careful moral and industrial training, and there results an individual who may pass through his whole life in a normal way. But if the training is omitted and the child is called upon to face such a complex environment as is seen in San Francisco, or in any large city, with temptations everywhere and no background of good habit, there is easily developed an individual more dangerous to society and more difficult to control than is the feeble-minded person. And yet, though innate mental defect is at the bottom of the trouble, still it is almost impossible to convince the average person that we are dealing with the problem of mental irresponsibility. It is often these border-line cases who commit serious crimes, such as murder and the worst type of sex crimes.

III. Next comes the group of constitutional psychopaths, individuals so unstable as to seem insane at times, and as to have the greatest difficulty in adapting themselves to normal social conditions. As adults, they often make up the agitators, the cranks and fanatics. In cases showing themselves in early life, it may be that a true psychosis is about to develop, but in many instances this will probably never take place. The constitutional psychopath often has impulses which he is utterly unable to control. Here we may find the kleptomaniac, the pyromaniac, and such impulsive types. For example, a report recently came from an institution of a lad who had set fire to many buildings, and was finally committed to a reformatory. The boy would build bonfires of paper and refuse in the middle of a room, often wait around, and later help to put out the fire. He himself stated that he just had to set fire to things; he didn't want to do any harm, but he wanted to see the fire burn. It is easy to see how persons with little power to control impulses, and afflicted at the same time with very strong impulses, can become offenders, and how under good conditions they will have great trouble in adapting themselves to the requirements of the community. It is easy to understand also why a person, who, under simple conditions, might have no difficulty in passing as normal, may develop dangerous traits under complex conditions, simply because of his inability to stand an unusual strain.

IV. Next comes a very interesting group, made up of children who are normal in most respects, but who have some special defect which makes ordinary progress impossible for them. First there is the child with special language difficulty, analogous to the aphasias which occur later in life as the result of brain injury or disease. He may be a normal child so far as his every-day conduct goes, but quite unable to read and write. Normal school progress is out of the question, and he usually remains indefinitely in the second or third grade, because of his one particular difficulty. Presently school becomes quite unbearable to him, and a perfectly justifiable truancy develops. Then there is the child with special difficulty in arithmetic. Again, there is the group of stammerers, children, usually neurotic, timid by nature, who suffer desperately under the ridicule which the normal child knows well how to use. As a rule, this last condition lends itself well to special train-

ing but sometimes no improvements can be made. Perhaps the child is so backward mentally that he cannot grasp the directions for controlling his trouble, and, on the other hand, he may have some organic disease which makes improvement virtually impossible. For example, congenital spastic paralytics have sometimes been treated, of course with no success; and not long ago two children, brother and sister, who were not profiting by the class work for stammerers in the public schools, were referred for a mental examination, and were found to have well developed cases of Friedreich's ataxia. It is this field of special difficulties which is tremendously important, and which deserves all the careful study that can be given.

V. Then comes a group of children who appear abnormal mentally, and who are clearly in poor physical condition. A markedly neurasthenic condition occurs in the presence of incipient pulmonary tuberculosis. The child is inattentive, is not capable of making sustained effort, fails in his school work, and has every appearance of being feeble-minded. This child, if given proper opportunities, will make remarkable progress in a mental way. Undernourishment, chronic infections, bad teeth, and similar troubles, affecting a child's physical condition, may have the same effect. These cases emphasize the close relationship existing between the physical and mental states, especially during a developmental period.

VI. The sixth group comprises those children with a special defect, but in the moral field. There is nearly always a demonstrable mental defect present, as well, in these cases, but the mental deficiency is not sufficient to account for the trouble which occurs. In a few cases there can be found no noticeable lack of intelligence. Judgment may be good and abstract ideas of right and wrong may be normal, but there is no feeling whatever of the wrongness of the given act and no aversion for it. This trait is, of course, more commonly seen in the case of defectives, where judgment itself is poor. For instance, one lad of dull mentality had been arrested on several occasions for stealing wood. When asked, during the course of the mental examination, what he most enjoyed doing, he replied, "I like to go and get wood for my mother." Here he was piously boasting of doing that very thing for which he was held in custody, apparently having no true realization that his acts constituted an offence, in spite of the fact that he knew he had been arrested for them. Similarly, an older boy, of good intelligence, had deliberately embarked on a life of crime, but when arrested early in his career he said, "I am glad that I was arrested, because now I have learned that it isn't safe and so won't get into trouble again. If I had gotten away with that, I would have gone right on." Certainly there is a lack of a true moral sense when a lad can make such a näive admission, while being detained for a serious offence.

VII. Finally, there is the group of young persons with true psychoses already developed. Occasionally there is found a case of dementia praecox with definite mental symptoms, showing often in the sex field, and hence leading to immoral conduct. A mild psychosis may also be associated with other conditions. For example, one girl, a ward of the Juvenile Court, with defective intelligence, became seriously immoral, and developed a bad case of gonorrhaea with double pyosalpinx. An operation was performed and both ovaries were removed. Naturally of an unstable, erratic temperament, this further strain had a profound mental effect, and she developed a melancholia. Suicide was attempted twice, but failed.

These classifications represent some of the types which appear for mental examination, but it is safe to say that very few of the children examined fall easily into one or another clearly defined class. Nearly always there are many factors involved, and some children do not allow themselves to be placed into any class, but present quite individual problems. No two cases of abnormality are exactly alike and no two individuals are alike, but a grouping into general types makes the consideration of the problem as a whole more simple. Following are a few case summaries, illustrating some of the more complex problems that come to us for solution:—

Case 1.—Boy, aged 21 years, arrested for robbing the mails. This boy had formerly been in the Preston School of Industry, and hence a mental examination was requested from the Juvenile Court. The early history is interesting. He was born in England. The father was a British Marine captain, and died when the boy was four years old of some form of paralysis. This was the only child, and after

the father's death the boy and the mother lived alone in their old home, very happily, according to the lad's memory. He appears to have been passionately fond of the mother. When he was 12 years old the mother married again, and the lad's happiness ceased. He hated his step-father for no reason which he could give, except that he "didn't want him in the house." The boy had finished his elementary school work, and wanted to leave home to go to a higher school. He won a scholarship for Harrow, but his step-father would not permit him to go, telling him that too much education was a waste of time and money. Thoroughly unhappy, the lad ran away from home, stowed away on a boat, and came to Canada. Here he went from place to place as opportunity offered, sometimes working on farms, finally going to Toronto, where he worked in a hotel as bell-hop. Here he saved a little money, and when about 18 years old started for the West. He was well grown and vigorous, but had much difficulty in finding work. He did pick and shovel work with railroad gangs, and finally joined one gang coming to the United States. He had little money, and walked the last 250 miles to the promised work. On arriving at his destination he found that sufficient labor had already appeared. He wandered on and on, finally coming to California. Work everywhere was scarce and food hard to get. Once he begged for food at a farmhouse, but it was refused, and he would not do it again. Eventually broke into a store and stole some articles which could be converted into cash and then into food. He was arrested and committed to Preston the following week. This was his first arrest. His record at Preston was excellent, and after 16 months he was paroled and found work in San Francisco. He worked in this one place for 14 months, or until his last arrest. The boy has very good general intelligence, and has a refined, gentle manner. Many of the facts of his wanderings have been verified, so probably most of his story can be taken for the truth. He has healthy interests, reads good books, spending much of his free time in the public library. Since beginning work in San Francisco he has lived in a cheap hotel, and has had almost no friends or even acquaintances. He states that he has been terribly lonely. When asked why he had stolen the letters, he said that he didn't get letters of his own, and had always been interested in the things which people write to one another. Asked if he did not realize that it was dishonorable, and dangerous as well, he replied that he had never known the people, and did not feel as though he were prying into other people's affairs. He further added that he had taken hundreds of letters, and probably for this reason had never thought of it as being dangerous. There are several ways of looking at this boy's story. When arrested in San Francisco, things looked very black for him. He was guilty of a serious offence, and had a previous reformatory record, apparently an old, perhaps hardened, offender. But when studied more carefully the whole picture is changed. There is little question but that this lad may make a normal citizen, and there is even reason for some surprise that he has succeeded as well as he has, when all things are considered.

Case 2.—Girl, aged 19, brought to the detention home for stealing. Her mother believed her to be a kleptomaniac, and not responsible for her acts. The family seems to be normal: an older brother is a university student, and an older sister is married and appears very intelligent. The home is comfortable, and the supervision of this girl has been good. Her early physical and mental development was somewhat retarded, and she was very hard to teach as a child. The mother noticed at 3 years of age that she was not like her other children. At 5 or 6 years she began to steal whenever the opportunity presented itself. She stole anything which she could take away, regardless of its value or lack of value, and hid away large numbers of useful articles. She has always been very untruthful, and now invents elaborate stories of her family connections, telling of great wealth and of social prominence. Recently she has taken to stealing birds or stealing money with which to buy birds. These she cannot bring home, and so they are left with various friends. She has no compunctions for her acts. Morally she appears quite incapable of making normal judgments. She entered school at the age of 8 years, and has attended regularly ever since. She has never been promoted at the end of one year's stay in a grade, and is now in the eighth grade. Her intelligence is defective, but the defect is not great enough to account for all her abnormalities. She has a special moral defect which makes her

utterly irresponsible and incapable of leading a normal life.

Case 3.—Boy, aged 18 years, brought to the detention home by a group of men, among them his employer, who were interested in him and had recently discovered that he was indulging in perverted practices. At their request he was given a careful mental and physical examination. The family history is very significant. The parents were both native Americans. There are two older brothers and an older sister. The parents separated many years ago, because of the peculiar character of the mother. She was not sexually immoral, but had some very undesirable traits. She discussed obscene acts before the children, smoked and drank, and altogether behaved in an objectionable way, which was having a bad effect on the children. The mother is a pretty woman, refined in appearance, and not at all suggestive of the type described. After the parents' separation the two older boys lived with the father's people. Both these boys are abnormal; one is a sex pervert, and the other, who has a court record, is a pervert of the worst type. The patient is a typical sex invert, and talks freely of his traits, considering them inherited from his mother. He states that from the time he was a small child he has never derived pleasure from normal boyish activities. At 7 years of age he masqueraded in girl's clothes, and at the present time he dresses in ballet costumes and the like whenever he can find the opportunity. He associates with a group of similar characters, all of whom have adopted feminine names and who give parties and entertainments from time to time for the purpose of assuming feminine attire and trying to simulate feminine appearance. A careful mental examination brings out several very important facts. This boy has a high degree of general intelligence and good native ability along all lines. No intelligence defect of any sort is demonstrable He is widely and accurately informed, both as to general information and as to school knowledge. His school work was discontinued at the age of 14 years, after he had completed the first year of his high school course. His interests, however, are very abnormal, and are quite in keeping with his character, as shown by his sex perversions. When at home he spends his time doing raffia work and making lace. He dislikes manual work of the rougher sort, and only did what was required of him in school. He has never attended a gymnasium, and objects to athletic games on the grounds that they are "brutal." His voice is high-pitched, and somewhat tremulous, and he has many feminine mannerisms, suggestive of attempted coyness. He dislikes the society of women, and has no respect for the men of his type, saying that he prefers big, vigorous men, but that he is compelled to associate with weaklings because other men do not seem to like him.

This type of individual is not very rare; several have been known to the Juvenile Court; but in no other case has there been so definite a history in regard to other members of the family. There is probably little that can be done to help this boy. He is unfortunate and an outcast, except in the group which he himself cannot respect. An enforced change in his behaviour, in the direction of more masculine behaviour, would probably make him even more unhappy than he now is. Such an individual as this is a danger only in so far as he associates with other and younger boys, teaching them his perverted habits. It is probable that many perverts are such, not because of an inherent tendency, but purely as the result of suggestion and habit, and this boy, if so inclined, could develop from younger normal boys a whole circle of perverts. Thus far he has shown no tendency in this direction, but it can never be certain that he will not do so.

Last of all, I will give the summary of a case of special language difficulty in a lad who is mentally unstable, possibly an epileptic, but who has good general intelligence, except for this one great deficiency.

Case 4.—Boy, aged 10 years. Was brought to the clinic for a mental examination at the request of his teacher because it seemed impossible for him to learn to read, even with special teaching. The family history is somewhat important here. The parents are separated, the father having been "peculiar" mentally. The mother thought him unsound. There are three other children, two of them normal, but the other with a marked stammer. This boy was apparently normal at birth, and had normal early development. He walked at 15 months, and began to talk at about the same time. When a little more than a year old he fell from a chair, and a short time later fell down a flight of stairs. After this last fall he was stuporous for a time, the doctor in atten-

dance saying he probably had meningitis. Since then he has been restless and easily excited, is a sleep-walker, had night terrors, and has minor attacks of mental confusion and excitability, which have been diagnosed as epileptic equivalents. He entered school at 6 years, but has reached only the second grade, because of his inability to learn to read. When examined by the Binet Scale he succeeded in passing all of the eight-year tests, four of the nine-year tests, three of the ten-year, and three of the eleven-year tests, this giving him a mental age of ten years, in spite of his failure in all tests requiring the use of reading or writing. He can read and write numbers, even of the higher denominations, as 3,580 and 1,235. He can read all the letters of the alphabet and write them from dictation. He spells out all words which he is asked to read, but he cannot read them as whole words. This is true of such words as "boy," "girl," "dog," "on," "at," "the." Only one word was found in the primer which he was able to read, and that word was "cat." When asked to write "papa" he wrote "payaen," for "house" he wrote "have." When asked to write "pencil" he requested that it be spelled for him. He then wrote the letters correctly from memory, but when a few moments later he was asked to read the word he had just written he read "quiet." He fails to draw two simple designs from memory, but there is nothing remarkable about this failure. The Sequin form board he handles rapidly and accurately, and has no marked difficulty with two geometrical puzzles. Simple arithmetical problems he solves readily, and in general, except for his one difficulty, he has fully average ability for a boy of his age.

Because of the history of a fall in infancy, followed by stupor, an x-ray examination was made of his head, and some evidence was discovered of a thickening of the skull in the left temporoparietal region, possibly resulting from a fracture. The boy's general physical condition is good, and his special senses are normal. He is restless and unstable, but ambitious to learn and anxious to make progress in school. His condition is somewhat analogous to cases described in adults, where, as the result of brain injury, the ability to read has been lost.

Book Reviews.

Notes on Galvanism and Faradism. By E. M. MAGILL. New York: Paul B. Hoeber. 1916.

This volume deals with the theoretical aspect of medical electricity. It is written as an introduction to the subject, and is intended mainly for the use of masseuses preparing for examinations in medical electricity. The book is divided into three parts, dealing with galvanism, faradism and currents from the main. Part one includes the following subjects: static or frictional electricity, static electricity in medical work, current electricity, chemical action as a producer of potential difference, galvanic cells, the relationship between voltage, resistance and current, the galvanic medical battery, different effects of anode and cathode, the uses of galvanism, ionic medication, the theory of ionization, solutions for ionic medication, electrolytic burns, and the effect of galvanic current upon muscles. Part two, dealing with faradism, discusses: induction, the faradic battery, methods of application and therapeutic uses of faradism, and combined currents—galvano-faradisation. Part three, currents from the main, includes a discussion of the dynamo, the utilization of the direct current, the dangers of earth currents, the alternating current, electric baths, and radiant heat and light.

Technic of the Carrel Method. By J. DUMAS and ANNE CARREL. New York: Paul B. Hoeber. 1917.

This book is a description of Dr. Carrel's method for the treatment of war wounds, and is one of the most important contributions which have been made to surgical technic since the beginning of the war. It is written primarily for nurses, for the success of the treatment depends upon the intelligent coöperation of nurses and assistants as well as upon the skill of the surgeon. A clear account is given of the technic employed and an accurate description of the apparatus used in carrying it out is provided. The materials used in the dressings are described: the rubber drainage tubes, tampons and compresses of gauze, cotton pads, sterile vaseline compresses, and various articles to keep the dressings in place. The preliminary microscopical examination and the irrigation procedure are explained. The appendices deal with the preparation of Dakin's solution and the microscopical examination of war wounds by the Carrel method.

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FURTHER DEVELOPMENTS IN THE PROGRESS OF THE INFLUENZA EPIDEMIC.

THE epidemic of influenza-pneumonia, which has prevailed in Boston and surrounding districts for over two weeks, is still maintaining unprecedented strength. From Washington come reports of its further spread all over the country, as it has appeared in 43 of our states and in practically all the army cantonments, thought it is not epidemic in all sections.

Among the drastic measures adopted by municipal and civil authorities in efforts to stamp out the epidemic, the following steps have been taken:

Boston Emergency Health Committee extends ban on all public gatherings, including theatres and moving picture houses, to 11.59 P.M. October 19.

Boston School Board orders public schools closed until October 21.

Boston Health Commissioner orders closing of barrooms, bowling alleys, pool and billiard and auction rooms and soda fountains, beginning 12.01 a.m. October 6.

Mayor Peters urges closing of Boston churches of every denomination Sunday.

Governor McCall and Henry B. Endicott, chairman of the State Emergency Public Health Committee, jointly appeal to church authorities throughout the State to follow Boston's example.

Still further drastic measures were taken recently by the municipal authorities in their fight to stamp out the influenza-pneumonia plague when Dr. William C. Woodward, commissioner of health, signed an order regulating the hours of business of retail dry goods, department, specialty, clothing and furniture stores and shops in the city of Boston.

The order, which went into effect October 8, directs that retail stores other than drug stores or places where food is sold, shall not open before 10 a.m., and shall not close before 6.15 p.m.

All events scheduled to take place between October 1 and October 12 have been cancelled. Among these are the Brockton Fair, the Horse Show at Readville, the celebrations of Columbus Day, and the various meetings for the Liberty Loan Drive.

In Boston the death rate, beginning October 1, may be seen from the following table:

	Influenza	Pneumonia
Tuesday	152	50
Wednesday	135	40
Thursday	166	25
Friday	154	27
Saturday	117	32
Sunday	153	37
Monday	146	24

Outside of Boston reports from 80 cities and towns in Massachusetts show that new cases are still on the increase. Fall River, 624; Lowell, 545; Clinton, 520; Springfield, 439; Fitchburg, 402; Arlington, 304; Wellesley, 242; Peabody, 210; Framingham, 207; Athol, 207; Danvers, 194; Middleboro, 175; Milford, 140; Grafton, 110; Lawrence, 107.

Dr. D. W. Carey of the State Health Department reports that industrial centers are seriously affected, Lowell, Fall River, New Bedford and Lawrence representing the most difficult problems.

State Commissioner of Health Dr. Eugene R. Kelley has given these statistics for Massachusetts alone:

One hundred and fifty thousand to 175,000 persons affected.

Five thousand persons have died.

Six thousand doctors fighting the epidemic.

Double that number nurses engaged.

Four hundred and fifty thousand "warning" bulletins circulated.

Five hundred thousand dollars appropriated to stamp out the disease.

Four hundred and fifty persons dying in the State every day.

In the army cantonments of the entire country there have been reported to Oct. 7 167,000 cases of influenza, 17,102 cases of pneumonia, with 4,910 deaths from these combined diseases.

Camp Dix, New Jersey, reports the highest death rate in any one day, where 64 soldiers died on Tuesday, October 1. This camp, next to Camp Devens, has shown a greater severity in these diseases.

Camp Devens shows a decrease in the number of new cases and also a gratifying decrease in the number of deaths. The total influenza cases reported from this camp is 12,707, with 1,860 cases of pneumonia and 593 deaths.

Dr. John M. Edgar of the First Naval District reports more encouraging conditions. The total number of cases reported in this district is 3,594, with 145 deaths.

Secretary of Navy Daniels announces intention to abandon Commonwealth Pier as receiving ship.

Quincy health officials are now satisfied that the epidemic is on the wane in that locality.

On October 7 the number of patients at the Fore River Hospital was reduced to 103 and there were 64 empty beds and no new cases were reported.

In response to Governor McCall's appeal for outside aid in combating the disease, doctors and nurses have come from many quarters, notably Washington, D. C., Maryland and the Middle West.

Captain Draper of the United States Public Health Service recently reported that 90 physicians of the Volunteer Medical Service Corps, all in the pay of the Federal Government, are now assigned to Massachusetts cities fighting the epidemic. About 50 more doctors assigned to this State by the Government have yet to arrive.

The great need for nurses' aids to assist the regular physicians and trained nurses in their tasks is voiced in the appeals of Henry B. Endicott, chairman of the Emergency Health Committee, and of Dr. W. C. Woodward, as given below:

Henry B. Endicott again appeals for more nurses and public school teachers as aids.

Dr. Woodward, Boston Health Commissioner, issued recently the following appeal:

"Nurses' aids are the prime need of the minute. With the help of an aid a trained nurse can see two cases, where without the aid she can see but one. For night service a trained nurse can supervise the work of 10 aids and care for 10 patients, while without an aid she can give her attention to only a single case.

"Notwithstanding the many appeals that have been made, the number of nurses' aids is still far short of the needs of the situation.

"The circumstances offer a real opportunity for substantial service by churches and by fraternal and other organizations."

The Emergency Public Health Committee has accepted the offer of Cardinal O'Connell, whereby the buildings of the St. John's Seminary are to be used as a temporary hospital for the care of influenza patients. With this offer the Cardinal also announced the readiness of 112 Catholic Sisters of the archdiocese to do district nursing. Mr. Endicott, on behalf of the committee, accepted both offers, and fifty of the Sisters have reported at the State House for immediate service. Seventeen convalescent patients have been sent to the Seminary.

Many colleges report new cases of influenza and pneumonia, among their students. Smith College has suspended all class work and other student activities.

"The spread of influenza in the western part of the State in not yet checked," President Neilson said in a statement recently, "and the authorities at Smith College in consultation with the State Board of Health have decided to suspend college exercises for the present. Students in the immediate vicinity will be permitted to return to their homes, but it is not considered desirable that those from a distance should travel at present. College dormitories will remain open and the student body in general will be disbanded."

One of the new movements in connection

with the work has been the establishment of a hospital clearing house, which will handle all information concerning the epidemic. Through this bureau calls for ambulances, physicians and nurses can be coördinated and other requests referred to the proper departments.

Under the leadership of the Women's Committee on Food Conservation of the Public Safety Committee, emergency canteens for influenza sufferers have been established at various stations in the city. Hot soups, cereals, milk and eggs may be obtained.

BOSTON HEALTH DEPARTMENT.

A RECENT issue of the Bulletin of the Health Department of the city of Boston contains mention of the change in Health Commissioners, and gives a brief summary of the career of Dr. William C. Woodward, who has succeeded Dr. F. X. Mahoney:

"Doctor Woodward was born in Washington, D. C., December 11, 1867. He was graduated from the Washington High School in 1885, and from the University of Georgetown, with honors, as a Doctor of Medicine in 1889; from the same university as Master of Laws, and again as honor man, in 1900; and during 1889-90 took a post-graduate course in medicine at the University of Pennsylvania.

"He was superintendent of the Washington Emergency Hospital in 1891; physician to the poor under the Health Officer of the District of Columbia in 1892; coroner, July, 1893, to August 1, 1894, when he assumed charge of the Health Department. He has been active in health matters, and has served as president of the American Public Health Association, also of the Conference of State and Provincial Boards of Health of North America, and of the American Association for the Study of the Prevention of Infant Mortality. He is a director of the American Society for the Control of Cancer; honorary member of the American Veterinary Association, and of the International Association of Dairy and Milk Inspectors. He is a fellow of the American Medical Association; member of the General Medical Board of the Council of National Defense; the National Commission on Milk Standards and the National Tuberculosis Association.

"He is now president of the District of Columbia Society of Medical Jurisprudence and vice-president of the Society for Social Hygiene. He holds the chair of state medicine in the Medical Department of the University of Georgetown and the chairs of medical jurisprudence in the Law Department of the same university, in the Medical Department of the George Washington University and the Howard University."

The Bulletin contains, also, an article on diphtheria. Although the total annual number of cases now occurring in Boston is less than a decade ago, in recent years progress toward further permanent reduction in the occurrence of this disease has not been satisfactory. The diphtheria curve corresponds in its general tendency to the curves of other contact diseases and with the prevalence of catarrhal conditions generally. By means of the Schick test, it may be determined within a period of four or five days whether or not an individual possesses an immunity to diphtheria. In case of doubt, immunity may be obtained by the administration of antitoxin. It has been found in Boston that unrecognized cases of diphtheria, either pharyngeal or nasal, are the most important factors in the spread of the disease. It is of utmost importance for physicians to detect at this time cases of diphtheria or of diphtheria carriers. The Department of Health is organized to furnish promptly laboratory reports of swab cultures from throats and noses in whatever number such reports may be requested; it will also supply personal diagnostic aid in any case in which such assistance may seem advisable. Furthermore, it investigates every positive diphtheria culture with a view to discovering and eliminating the source of infection. It is urged that physicians examine both the nose and throat in every case of illness in a child whom a physician may be called upon to attend, and to forward to the department swab cultures, not only in cases showing suspicious clinical symptoms in the throat and nose, but in all cases presenting marked pharyngeal inflammation or the occlusion of a nostril. Especially in cases clinically suspicious, it is urged that examinations be secured of all other members of the family.

In regard to smallpox and typhoid fever, it has been recommended that persons in establishments manufacturing materials for the Federal Government be vaccinated, for these communicable diseases must be prevented in order to maintain good health and labor efficiency. The Public Health Service will vaccinate, free of cost, any persons applying at the service stations.

The report of the Baby Hygiene Association shows that this department has cared for 4711 babies during the first six months of 1918

This represents an increase of 23% over last year's figures. Three new stations have been opened—in Jamaica Plain, Upham's Corner, and East Boston.

DOCTORS AND THE LIBERTY LOAN.

It should not be necessary to urge upon physicians the importance of their purchasing Liberty Bonds to the limit. To do so is not merely a matter of patriotic duty and of self-preservation, but also a sound financial investment. We are not asked to give money to the Government, but to lend it at good interest. Doctors are proverbially poor investors, and the Liberty Loan affords us opportunity to make our savings safe from speculation as well as from the common enemy. Shylock wanted justice and his bond, but we may be sure there will be no justice in the world for us or for any man unless it be secured by our bonds as well as by the flesh and blood of our fighting brothers. Present appearances suggest that the war may be soon ended. The Fourth Liberty Loan may be the last to which we shall be privileged to subscribe, and this possibility alone is reason for carrying it to overwhelming success.

SPECIAL PRECAUTIONS AGAINST SPANISH INFLUENZA.

Reports from Europe during the past few months stated that there had been extensive epidemic prevalence of a disease resembling influenza. Many thousands of cases occurred in Spain (attacking nearly one-third of the population), Germany and England. On this side of the water, Cuba was visited, during June last, by a similar epidemic, which was stated to have affected one-quarter of the population of Havana, but not a single death resulted. In Spain, however, about 700 deaths are said to have been caused by the outbreak.

As, apart from the European epidemic, it is very evident that local outbreaks of what has been called "Spanish influenza" have occurred in several military posts in this country, and as a number of ships reaching our ports have had numerous cases among the passengers, this malady has become of greater importance in local health work.

While, so far, no definite organism has been identified with the cases seen, either abroad or here, the Department of Health has, as a matter of precaution, established special procedures to meet the situation. At a meeting of the Board of Health, held on September 17, 1918, influenza was made a reportable disease (that is, a disease of which all cases seen by physicians or cared for in institutions, must be reported to the Department of Health) as well as pneumonia, both broncho and lobar, since fatal cases of influenza are likely to be classed with the lung inflammation causing the serious symptoms.

The Department of Health is keeping all cases reported to it and supposed to be "Spanish Influenza" under observation, in order to determine whether secondary (contact) cases arise, as well as to study the disease.

In the European reports of the present epidemic it is stated that the influenza (Pfeiffer's) bacillus has been rarely found. Various other organisms have been named, but many reports mention a "grampositive coccus," apparently differing from the micrococci, commonly associated with catarrhal lesions. This pleomorphic "coccus" has been described in British, French, German, and Spanish literature, and seems the most promising, bacteriologically, of the organisms found. The investigations so far made by the Research Laboratory of the Department of Health have given the same results as regards the finding of the above-mentioned pleomorphic "coccus" in the sputum. Swabbings from the nasopharynx of cases in the Department's hospitals have, however, shown the presence of the influenza bacillus in a much greater percentage of the cases than previously, when the sputum alone was examined. Blood cultures, taken during the height of an attack, in a number of cases, have been uniformly negative.

A comparison of the present world prevalence of this "Spanish influenza" with the pandemic of 1889-92 shows that the clinical course of the prevailing malady is very similar to or identical with that of the previous outbreak. The findings of bacteriologists during the former epidemic were of the same varied character as has been reported in the European literature this year. Pfeiffer's bacillus was discovered in 1892, at the end of the last previous epidemic, and had not been described as associated with the outbreaks.

Symptoms of an Attack.—An attack of "Spanish influenza" is characterized by a sud-

den onset with chilliness, fever, general aching of joints and head; a varying amount of prostration; catarrh of conjunctival, nasal and bronchial mucous membranes. It usually runs its course in about three days, without serious results. However, in a certain percentage of cases the attack, as described, is followed, commonly on the third or fourth day, by pneumonia, and a patient so afflicted, may die within a few days.

Precautions to be Observed.—In the first place, as the malady is, of course, spread by discharges from mouth and nose—as in expectorating, coughing, or sneezing—no one should expectorate or sneeze in a public place, except into a handkerchief. All handkerchiefs used by persons suffering from influenza-like attacks, or in fact from any "cold," should be regarded as the possible source of influenza, as well as various other infectious diseases, and they should be kept separate from other articles, as in a bag or covered receptable, until disinfected by boiling. Necessary expectoration in the house should be into special receptacles containing a disinfectant or into a toilet. Persons with a "cold" should avoid talking close to another's face, since influenza and other germs are commonly conveyed in the spray sometimes thrown about from the mouth. Of course, common cups, towels, pencils and other objects which are likely to convey germs from one mouth to another are to be guarded against.

Every one showing indications of a severe influenza-like attack should go home, and preferably to bed, as in this way they will conserve the strength so necessary to avoid the pneumonia which may follow in such cases. As pneumonia frequently has developed suddenly in cases apparently recovering from influenza, it is advised that all convalescents from the latter remain in bed for a week or ten days, until the danger is over.

As the better the general health the more resistant a person is to infectious diseases, including "Spanish influenza," everything which will improve this should be favored, and all debilitating influences, such as overwork, insufficient sleep, chilling, undernourishment, carefully avoided.

VOLUNTEER MEDICAL SERVICE CORPS.

The Council of National Defense authorizes the following statement relative to classification in the Volunteer Medical Service Corps:

Interest among the members of the medical profession as to how their services are to be used in the Volunteer Medical Service Corps, once they have been enrolled and have put on the badge which indicates their willingness to serve and readiness to respond to a request from the Surgeons General of the Army, Navy or Public Health Service, or from the Provost Marshal General or from the General Medical Board of the Council of National Defense, has led to the announcement by the Central Governing Board of the basic system of classification for the organization. The lines on which the classification is made were determined by the Committee on Classification of the Central Governing Board, whose report was adopted. This Classification Committee has on it representatives of the Army, Navy, Public Health Service, Council of National Defense, American Red Cross, Hospitals, Colleges, Civilian Doctors, War Industries.

A summary of these classes follows:

Class I.—These will be the physicians first recommended by the Central Governing Board to apply for commissions in the Medical Reserve Corps of the Army, Reserve Force of the Navy, or for appointment in the Public Health Service. They include physicians under 55 years of age, who are without an obvious physical disability which is disqualifying, and who have not more than one dependent in addition to self; or who have an income or whose dependents have an income sufficient for the support of dependents other than that derived from the practice of their profession.

There are several exceptions provided for because of evident essential needs. Whether a physician's services are essential to his community will be established by the Central Governing Board on recommendation of representatives of the Board appointed by it to make a survey of local conditions. Whether a physician is essential to an institution with which he may be connected will be established after conference between representatives of the Central Governing Board and representatives appointed by governing bodies of the institutions concerned. Similarly, the question of whether a doctor is essential to a health department will be established by conference between the Central Governing Board and the head of that health department. The question whether a teacher in a medical school is essential to that

position will be established by the Central Governing Board and representatives of the institution. Conference between the board and accredited representatives of industries concerned will determine whether doctors employed as industrial physicians are essential in those positions. A physician essential on his local or medical advisory board will not be disturbed.

Class II.—In Class II are physicians under 55 years of age who are without an obvious physical disability which is disqualifying, and who have not more than three dependents in addition to self. These will be recommended by the Central Governing Board, when the need exists, to apply for commissions.

Exceptions in Class II. are the same as in Class I.

Class III.—These are physicians under 55 years of age who are without an obvious physical disability which is disqualifying, but who have more than three dependents in addition to self; and they are the physicians included among the exceptions from Classes I. and II., namely those essential to communities, institutions, health departments, medical schools or industries. They will be recommended by the Central Governing Board to apply for commissions when the emergency is so great as to demand their services.

Class IV.—In Class IV. are the physicians who are ineligible for commissions in the Medical Reserve Corps of the Army, or Reserve Force of the Navy, but who are available for all other services. The physicians in this class include those over 55, those having an obvious physical disability which is disqualifying, and those rejected for all government services because of physical disability.

Physicians not professionally eligible for the Medical Rerserve Corps of the Army or for the Reserve Force of the Navy, or for appointment in the Public Health Service, will be recorded but not admitted to the Volunteer Medical Service Corps.

Applications for enrollment in the Volunteer Medical Service Corps continue to come in from physicians from all over the country and by every mail to the headquarters at the Council of National Defense Building. These are being classified as rapidly as possible. Representative physicians from various parts of the country are assisting in the work incident to the classification.

State Executive Committees, enlarged to handle the work of the Volunteer Medical Service Corps, are perfecting the organizations in their states, and county representatives have been appointed in practically every county in the country. Group meetings are being held in many of the states, at which the State Executive Committees and county representatives are being addressed by members of the Central Governing Board of the Volunteer Medical Service Corps.

JOINT RED CROSS TUBERCULOSIS CAMPAIGN.

In order to finance the tuberculosis work in the country, the Red Cross and the National Tuberculosis Association have planned to join forces in the raising of money. Both associations will put their efforts into making a success of the campaign for Red Cross membership, to be known as the Christmas Roll Call. It is hoped that by this means the tuberculosis agencies may secure an income greater than was obtained last year. The sale of Red Cross Seals will be abandoned this year, although the Seal will be used as a distinctive feature of the Red Cross Christmas membership campaign. Each new member will receive a special packet containing educational literature on tuberculosis, ten Red Cross Seals, and information that will indicate to each of the expected millions of members of the Red Cross that he or she has a distinctive part in the tuberculosis campaign.

The Red Cross will bear the expenses of the campaign, including the cost of distribution of printed matter of various kinds. Anti-tuberculosis societies will coöperate by offering the assistance of their office staffs and other machinery for making the campaign a success. Extra local expenses not authorized in advance by the Red Cross will be paid by local tuberculosis societies.

Because of its own constitutional limitations, the American Red Cross cannot use any part of its membership funds for other than its own work, but in order that the interests of the anti-tuberculosis campaign throughout the United States may be insured against loss and may be safeguarded for the future, the War Council has appropriated to the anti-tuberculosis campaign of this country a sum amounting to $2,500,000. The National Tuberculosis

Association has been designated as the agency responsible for the distribution of this fund.

The Executive Committee of the National Association has arranged to grant to each State as a minimum an amount equal to the gross sale of Christmas Seals for 1917. The distribution of the sum remaining after the allotment of this amount is to be made on a basis to be determined by the Executive Committee of the National Association. In accordance with the wishes of the American Red Cross and for the protection of the entire anti-tuberculosis movement, the National Association will require a budget to be submitted in advance of an appropriation for 1919 work and also an accurate detailed accounting of all money appropriated.

MEDICAL NOTES.

Cholera Outbreak.—There are more than 20,000 cases of cholera in Petrograd according to the *Fremden-blatt* of Hamburg. This reports that up to the beginning of August 1,100 deaths had occurred. The authorities, it declares, are helpless and the disease spreads unchecked.

Berlin has also reported sixteen fatal cases of cholera out of a total of seventeen; and several cases have been discovered in Vienna.

Typhus Among 50,000 Refugees.—More than 50,000 refugees from Turkey have been stricken with typhus in the island of Mytilene, according to a cablegram received by George Russos, Greek minister at Washington, and forwarded to the relief committee for Greeks in Asia Minor.

Appointment of Dr. Glidden.—Dr. Edson W. Glidden, 2nd., has been appointed Assistant Medical Director of the War Risk Insurance Bureau, Medical Department, in charge of the Tuberculosis Department. This will be of interest to those who realize the large number of tuberculous ex-soldiers and sailors who are being cared for by this Bureau. Dr. Glidden was for several years assistant superintendent of the Lakeville Tuberculosis Sanatorium, Middleboro, Mass., and has also been associated with Dr. David R. Lyman of the Gaylord Farm, Wallingford, Conn.

The Chair of Surgery at Zurich.—Professor P. Clairmont, of Vienna, is to succeed Professor F. Sauerbruch as professor of surgery and director of the Surgical Clinic at Zurich.

WAR NOTES.

Medical Officers Commissioned.—The following appointments of Massachusetts men in the Medical Corps of the U. S. A. have been made:

Captain,—Dr. D. H. Luce, Canton; Dr. F. Everett, Springfield; Dr. W. Goodell, Springfield; Dr. H. J. Howard, Malden; Dr. F. R. Abbe, Boston; Dr. A. C. Eastman, Springfield; Dr. H. C. Kirby, New Bedford; Dr. F. J. Sexton, Brockton; Dr. Winsor M. Tyler, Lexington; Dr. James J. Walsh, Lexington; Dr. R. J. Ward, Worcester; Dr. G. A. Pierce, Tewksbury; Dr. J. L. Bacon, Southboro; Dr. J. M. Kelly, Dorchester; Dr. Thomas Paul Jones, Roxbury; Dr. B. T. Burley, Worcester; Dr. T. E. Cavanaugh, Holyoke; Dr. E. J. Dailey, Somerville; Dr. W. L. Hearn, Lynn; Dr. G. MacC. Mason, Boston; Dr. E. J. Sweeney, Springfield; Dr. J. P. Treanor, Dorchester; Dr. R. F. Sheldon, Boston; Dr. H. W. Trask, West Boylston; Dr. R. H. S. Young, Brookline; Dr. Frederick A. Bardwell, Boston; Dr. Frederick T. Clark, Westfield; Dr. Frank R. Jenks, Pawtucket, R. I.; Dr. Thomas E. Caulfield, Woburn; Dr. Everett V. Hardwick, Dorchester; Dr. Wm. H. McMann, Boston; Dr. J. H. Laurence, Brockton; Dr. F. W. Gay, Malden.

First Lieutenant,—Dr. J. H. Burkhead, Middleboro; Dr. H. H. Flagg, Charlestown; Dr. W. E. Buck, Wilmington; Dr. T. J. Cahill, Cambridge; Dr. S. E. Ryan, Springfield; Dr. Ernest M. Clark, Ashburnham; Dr. Edward R. Gookin, Dorchester; Dr. Orlando S. Mayhew, Vineyard Haven; Dr. Ernest W. Small, Belmont; Dr. Charles F. Traynor, Biddeford, Me.; Dr. T. B. Delaney, Lowell; Dr. P. A. Devaney, Waverley; Dr. H. B. Dunham, Brockton; Dr. E. D. Hartnett, East Boston; Dr. F. T. Henry, Salem; Dr. John Joseph Kenney, Providence; Dr. T. R. Donovan, Fitchburg; Dr. L. Lazarus, Worcester; Dr. E. R. Leib, Worcester; Dr. E. J. Grainger, East Boston; Dr. W. W. Walker, Boston; Dr. E. A. Barrows, Plymouth; Dr. J. H. Devenny, Dorchester; Dr. D. F. Downing, Westboro; Dr. H. H. Bard, Pittsfield; Dr. W. L. Tucker, Hinsdale; Dr. J. F. Ahern, Dorchester; Dr. W. B. Bartlett, Concord; Dr. E. H. Judd, Springfield; Dr. C. G. Wiles, Brockton; Dr. John M. Murphy, Brockton.

WAR RELIEF FUNDS.—On October 7th, the totals of the principal New England War Relief Funds reached the following amounts:

Belgian Fund	$705,892.18
French Orphanage Fund	405,814.42
Armenian-Syrian Fund	312,828.02
Italian Fund	215,756.85

REJECTIONS OF DRAFTED MEN.—Rejections of drafted men at the military cantonments running at times as high as 34%, have caused Major Roger Wolcott to notify all local and district boards of the state, urging them to be more rigid in the matter of physical examinations.

Camp Devens has rejected 12¾ per cent. as physically unfit to become soldiers. Included in the number rejected were some of the obvious cases of unfitness for service. One of the men had a difference of 3½ inches in the length of his legs. Another had fractures of the skull and back. Other cases were of club feet, contracted fingers, scoliosis, double hernia, claw toes, defective vision and teeth.

Members of the Medical Advisory Boards are performing service of the highest character to their country, but such serious laxity in service is a great hindrance to the efficiency of the National Army.

DEMANDS ON RED CROSS INCREASE.—The widening scope of the American army activities in France is reflected in the increased demands being made on the American Red Cross as shown in a report lately received by the war council.

In August, Red Cross workers received and answered 10,000 letters from relatives in the United States seeking information about men in the fighting ranks. Many letters were also written for the soldiers to their families.

Seven new hospital recreation huts were established during the month, making a total of 17 now maintained by the Red Cross in France. The organization is now operating 72 dispensaries in cities and towns near the front for the benefit of the civil population. Many of these are short of physicians. In August, these dispensaries treated 34,250 persons, including 25,000 children. Red Cross educational exhibits to combat infant mortality and tuberculosis were attended by 380,000 persons during the month.

500 BAY STATE LIMITED SERVICE MEN CALLED.—Provost Marshal General Crowder has made an induction call for 500 Massachusetts white men for limited or special military service. They were entrained during the five-day period beginning September 30 for Fort Slocum, New York. The allotment provides for an average of four men, though some of the larger divisions are called upon for five or six men.

Membership in the so-called Volunteer Medical Service Corps does not create military status, and does not affect the status of registrants before the Selective Service law. Provost Marshal General Crowder adds:

"Resignations of medical members of selective service boards, based upon membership in the Volunteer Medical Service Corps, will not be accepted."

BRIGHAM HOSPITAL TAKEN BY THE ARMY.—The Robert B. Brigham Hospital, for incurables, on Parker Hill, Roxbury, has been taken for army purposes. This hospital, together with the Elks' Reconstruction Hospital, being erected on the grounds, will be known as the United States General Hospital, No. 10. Some of the patients have been transferred, and the remainder of the one hundred and fifty cases will be sent to homes or other hospitals. A few patients will have to be sent to Tewksbury or other public institutions, although the trustees hope to provide for their care in other hospitals. This is one of the largest hospitals in this part of the country, and has ample provision and excellent equipment for about three hundred patients.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending Oct. 5, 1918, the number of deaths reported was 1476, against 185 last year, with a rate of 98.13, against 12.49 last year. There were 92 deaths under one year of age, against 27 last year.

The number of cases of principal reportable diseases were: diphtheria, 17; scarlet fever, 4; measles, 2; whooping cough, 14; tuberculosis, 36.

Included in the above were the following cases of non-residents: diphtheria, 10; tuberculosis, 5.

Total deaths from these diseases were: diphtheria, 8; measles, 1; whooping cough, 15; tuberculosis, 33.

Included in the above were the following non-residents: diphtheria, 4; tuberculosis, 6.

Influenza deaths, 991, 63 of which were non-residents.

NOTES ON THE INFLUENZA EPIDEMIC.

There is at the present time very little abatement in the Spanish Influenza epidemic, but stringent measures are being taken by every town and city in Massachusetts and elsewhere.

Surgeon-General Rupert Blue of the Public Health Service of Washington declared that reports indicate that Boston proper, Brookline, Gloucester, Chelsea and Quincy are most seriously affected, but that many suburban towns are meeting the situation with their own resources. The Western part of the state is as yet but slightly affected.

Shortage of medical, nursing, orderly, laundry and kitchen staff because of high hospital mortality has seriously crippled the efficiency of the hospitals.

The Boston death record is as follows:

	Influenza	Pneumonia	Total
Sept. 14	9	12	21
Sept. 15	15	9	24
Sept. 16	23	5	28
Sept. 17	28	13	41
Sept. 18	30	15	43
Sept. 19	32	10	42
Sept. 20	44	10	54
Sept. 21	57	23	80
Sept. 22	44	19	63
Sept. 23	74	13	87
Sept. 24	81	28	109
Sept. 25	81	24	105
Sept. 26	123	33	156
Sept. 27	107	37	144
Sept. 28	128	24	152
Sept. 29	119	30	149
Sept. 30	142	29	171
Oct. 1	152	50	202
Oct. 2	135	40	175
Oct. 3	166	25	191
Oct. 4	154	29	183
Oct. 5	117	32	149
Oct. 6	153	37	190
Oct. 7	146	24	170
Oct. 8	123	27	150
Oct. 9	124	20	144
Oct. 10	96	28	124
Oct. 11	108	18	121
Totals	2606	602	3268

Lynn has opened a section of the women's Home for Christian Work for the temporary care of children made orphans by the death of their parents during the epidemic. Already six small children are being cared for. The situation is being somewhat improved.

Springfield shows a perceptible decrease in the number of influenza cases. Hospital facilities have been provided for and 100 school teachers are taking a short course in hygiene at the Red Cross Headquarters. All schools and public meetings are closed.

Quincy is recovering slowly from the epidemic. The State of Maryland has sent a hospital train consisting of seven Pullman cars and a sufficient number of doctors and nurses to Quincy, which seems to be in greatest need of it.

Braintree and Weymouth each reported three deaths so far.

Newburyport received help from the outside to fight the epidemic. Dr. J. W. Hunter, Charleroi, Pa.; Dr. E. N. Dragonetti, Newark, N. J., and Dr. Wm. Mason of the State Board of Health, with 4 nurses and 2 helpers, arrived to coöperate with the local board. There seems to be no abatement up to the present time.

In Cambridge a slight decrease was noted in the number of deaths, while the number of new cases is about the same. It is estimated that about 6000 are sick with the disease.

Pittsfield has been ordered to close churches owing to an increase in the number of cases there.

Great Barrington reports a sudden wave of influenza, with 2000 new cases.

Brockton has called out the State Guard to help establish 200 beds in an emergency hospital for influenza patients on grounds adjoining the Brockton Hospital. Shoe manufacturers report 1400 employees absent from shoe factories. On account of the serious condition in this place, Brockton has asked for the temporary release from service of physicians now in the army. The Brockton Fair is ordered cancelled.

Norwich, Ct., reports a total of 31 deaths for the week of Sept. 29, but fewer cases are at present developing.

New Bedford reports 10 deaths and 700 new cases of influenza.

Wilmington, Del., is in the grip of the epidemic, 38 out of 104 physicians in the city reporting more than 2000 cases.

Dedham has about 500 cases.

Plymouth has ordered all churches and theatres closed. Jordan Hospital is full to overflowing.

In Gloucester there is no sign of a decrease in the number of cases. The Red Cross Emergency Hospital has now 40 patients.

Lowell influenza cases total 241 in three days.

The Brookline Board of Health issued an emergency call for nurses. The hospitals are without sufficient nurses and in many instances whole families are ill and the sick must prepare their own food.

Clinton has scarcely felt the effect of the epidemic, but the Board of Health is trying all measures to forestall infection.

The Somerville Board of Health ordered all schools closed. It was estimated that several hundred had either contracted the disease or live in households where it is prevalent.

The Harvard Infantile Paralysis Commission has temporarily suspended treatment because many of the physicians and patients are ill with the influenza.

Providence and Halifax each sent six nurses to Boston in response to help.

Newport Naval Camp reports influenza on the wane. Gov. Beeckman assisted today in the opening of a Red Cross Hospital on the grounds of the Newport Hospital to be used in caring for influenza patients. It will accommodate 40 patients. All public funerals are banned and placards are placed on houses where the disease exists.

New London, Ct., closed all schools, theatres and churches as a preventive against further spread of influenza. Between 1200 and 1300 cases have been reported.

New York has an increasing number of cases at present but the number is comparatively low. However, volunteers have been asked for and physicians and nurses were sent to railroad stations here to treat travelers showing symptoms of the malady.

Portland, Me., has had three deaths due to the influenza.

The District of Columbia has ordered all schools closed to stay closed until the epidemic is in control. All Liberty Loan parades and community centre activities have likewise been called off.

At Hampton Roads, Va., 150 cases have developed among the enlisted men.

Camp Dix has 1500 cases, from which 35 men have developed pneumonia.

Deaths among the sailors of the First Naval District are declining. The total number of cases in the district has been 3650, with 229 deaths, including 29 at Portsmouth Naval Hospital.

The combined expert forces of the Government will immediately concentrate their efforts toward stamping out this epidemic through the United States. With a special appropriation of $1,000,000 provided by Congress, Surgeon-General Blue, coöperating with the medical authorities of the Army and Navy, will begin a vigorous campaign to check the spread of the disease which has already attacked 36 states and is killing 4% of its victims.

It was denied by the Public Health Service that any of its specialists had discovered a new serum for influenza. The Surgeon General's staff of the War Department is preparing a vaccine for pneumonia, and will be ready to announce it soon.

Henry B. Endicott, Chairman of the State Emergency Health Committee, has urged schoolteachers in Boston and throughout the state to volunteer for relief work in the fight against the influenza epidemic. "Any woman offering her services today," he says, "is doing as important work as though she were offering to go to the battle front."

The latest reports from Camp Devens show a victory over the influenza there. One week ago today 56 deaths were announced as the day's total toll of the epidemic. The report of October 6th gives only eight in the death list.

October 7th shows no deaths in 2 days at Beverly, and not a new case.

Lowell has ordered a general closing of all churches and places of public meeting. There are many houses in this section where no coal can be procured.

Lawrence reports influenza cases to the number of 1635 up to date and 49 deaths.

Brockton's latest list shows 100 per cent. increase in the number of deaths, though the board gave the opinion that the situation is now well in hand with the ample number of doctors and nurses on hand.

The Massachusetts Medical Society.

RECENT DEATHS OF FELLOWS.

Between September 15 and 29 The Massachusetts Medical Society lost by death eleven Fellows, at least eight of these being due to influenza and pneumonia. The average age of the

eight was thirty-seven years. During the whole of the last Society year the Society lost by death fifty-eight Fellows and the previous year, fifty-three Fellows.

STATED MEETING OF THE COUNCIL.

A STATED meeting of the Council was held in John Ware Hall, Boston Medical Library, Wednesday, October 2, 1918, at twelve o'clock, noon. The President, Dr. Samuel B. Woodward, was in the chair, and the following 27 Councilors were present:

ESSEX NORTH,
G. E. Kurth.

MIDDLESEX SOUTH,
F. E. Bateman,
E. H. Bigelow, C.,
C. H. Cook,
Edward Mellus,
C. F Painter,
Godfrey Ryder,
A. K. Stone, Treas.,
F. R. Stubbs.

NORFOLK.
D. N. Blakely,
E. H. Brigham, Libra.,
W. L. Burrage, Sec.,
G. W. Clement,
C. B. Faunce.

PLYMOUTH,
A. E. Paine, M.N.C.

SUFFOLK,
J. B. Blake, V.-P.,
J. L. Ames,
J. A. Cogan,
E. G. Cutler,
C. M. Green, C.,
F. L. Jack,
J. L. Morse,
Stephen Rushmore,
G. C. Smith,
Mary A. Smith.

WORCESTER,
W. P. Bowers, Ex-P.,
S. B. Woodward, Pres.

A quorum being present, the meeting was called to order by the Chairman at 12.12 o'clock. The reading of the record of the last meeting was omitted by vote. Dr. Charles M. Green read the report of the Committee on Membership and Finance as regards membership.

REPORT ON MEMBERSHIP.

The Committee on Membership and Finance makes the following recommendations as to membership:

1. That the following named Fellows be allowed to retire, under the provisions of Chapter I, Section 5, of the by-laws:

Stephen Casper Burton, of Pittsfield.
Judson Worthington Hastings, of Feeding Hills, Agawam.

2. That the following named Fellows be allowed to resign, under the provisions of Chapter I, Section 7, of the by-laws:

David Trueman Brewster, junior, of Hathorne, with remission of dues to the amount of $5.
Philip Hale Pierson, of San Francisco, with remission of dues for 1916, 1917, and 1918.

3. That the following named Fellows be deprived of the privileges of fellowship, under the provisions of Chapter I, Section 8, of the by-laws:

Charles Baker Adams, of Springfield.
Frank Stedman Bulkeley, of Ayer.
Frank Rudolph Coursey, of Boston.
Clarence Francis Desmond, formerly of Waltham, now of Worcester.
Edmund Scott Dow, of Allston.
Henry Ambrose Dunphy, of Thorndike.
Arthur Tenney Gage, formerly of Melrose Highlands, now believed to be in California.
Thomas Francis Godfrey, of Springfield.
Patrick James Hughes, of Lawrence.
Edward Joseph Kelley, of Watertown.
Pierce Powers McGann, of Somerville.
Elias Saul Nathanson, of Lynn.
Hervey Brackett Pitcher, of Leominster.
Federick Artemas Simonds, formerly of Cambridge.
Richard Henry Thompson, of Malden.

4. That the following named Fellow be granted a remission of dues for the years 1916 and 1917, provided he pay the dues of 1918 on or before November 1, 1918; and that on his failure to pay the dues of 1918 as aforesaid, he be deprived of the privileges of fellowship, in accordance with Chapter I, Section 8, of the by-laws:

Clement Willis Sparhawk, of Danvers (or Middleton).

For the Committee on Membership and Finance,
CHARLES M. GREEN, *Chairman.*

DR. W. P. BOWERS, Secretary of the Board of Registration in Medicine, took the floor and objected to one of the names on the list of fellows to be allowed to resign, on the ground that the Board of Registration in Medicine had revoked the license of this fellow because he carried on a fraudulent scheme. Dr. Bowers said it was a flagrant case as viewed by the Board of Registration and he thought that the fellow should be expelled from the Society rather than be allowed to resign. Dr. Green explained that his Committee had placed the name on the list at the request of the Committee on Ethics and Discipline and that he should be glad to erase the name from the list of recommendations. It was voted to so erase the name and to refer it back to the Committee on Ethics and Discipline for further action. The report thus amended was accepted and its recommendations adopted by vote.

DR. GREEN submitted a report for the Committee on Membership and Finance as regards finance, and it was accepted by vote.

REPORT ON FINANCE.

The Committee on Membership and Finance makes the following recommendation as to finance:

That the affiliation with the BOSTON MEDICAL AND SURGICAL JOURNAL be continued during the year 1919, at an expense to the Society of $3 for each member in good standing.

For the Committee on Membership and Finance,
CHARLES M. GREEN, *Chairman.*

The following petitions were read and committees appointed to consider them, as follows:

PETITIONS FOR RESTORATION TO MEMBERSHIP.

For Edward J. Cotter: A. N. Broughton, D. T. O'Keefe, Victor Safford.
For G. A. Crittendon: C. H. Mace, W. P. Stutson, J. B. Atwater.
For Harvey A. Field: M. V. Pierce, C. A. Cheever, R. D. Schmidt.
For Henry Tolman, Jr.: W. G. Phippen, Emile Poirier, G. K. Blair.
For Harris S. Pomeroy: H. K. Foster, R. E. Foss, W. G. Phippen.

On nomination by the Chairman, the following Committee to audit the Treasurer's ac-

counts was appointed: Ray W. Greene, Worcester; Charles H. Hare, Boston.

On nomination by the Chair, the following were appointed delegates to the annual meeting of the Vermont State Medical Society at Burlington, October 10 and 11, 1918: Herbert G. Rockwell, Amherst; Alfred A. Wheeler, Leominster.

On nomination by the Chair, the following were appointed delegates to the conferences on Medical Education and State Licensing Boards at Chicago, in February, 1919, respectively: H. C. Ernst, Boston; W. P. Bowers, Clinton.

The Chairman presented brief obituary notices of these councilors who had died since the last meeting of the Council: Joseph Cyrus Stedman, Jamaica Plain; Daniel Joseph Finegan, Gloucester; John Edwin Urquhart, Ashfield; Walter Warren Kingsbury, Malden.

DR. RYDER of Malden said that he wished to bring the matter of the use of sugar in candy before the Council at the request of his local society, and he introduced the following motion:

Moved: That until the end of the War the Food Commission be requested to restrict the manufacture of candy for civilian use fifty per cent. at least.

The motion was discussed by Dr. Bateman and others and a motion was made to lay it on the table. This motion was lost by a voice vote. Further discussion of the motion was participated in by Dr. G. C. Smith and Dr. Ryder and Dr. Bateman. The motion being put, was carried by a standing vote of 12 to 11. After further discussion, Dr. Bateman moved that the motion be reconsidered, and it was so voted. The motion was then amended to read:

Moved: That until the end of the War the Food Commission be requested to further restrict the manufacture of candy for civilian use.

The motion having been put, was carried.

Adjourned at 12.50, noon.

WALTER L. BURRAGE,
Secretary

Miscellany.

HEALTH INSTRUCTIONS THROUGH DRAFT BOARDS.

THE ultimate withdrawal of more than 30,000 physicians from communities throughout the country imposes an additional obligation upon the people to avoid unnecessary illness, to correct physical deficiencies that may lead to illness, and so to order their living habits, their activities, their indulgences, that they may not only avoid illness but increase their physical capacity to the utmost.

On September 23, Provost Marshal General Crowder called attention to a circular of instructions prepared by the United States Public Health Service for registrants declined in the draft because of physical disability. The circular, copies of which have been placed in all the local draft boards throughout the country, is the result of a recommendation made to General Crowder by Surgeon General Rupert Blue of the U. S. Public Health Service. The Surgeon General points out that in the first draft about one-third of the men examined were rejected for physical disabilities and that hundreds of thousands will be added as a result of the examinations to be made of the new registrants.

"It is highly desirable," said Surgeon General Blue, "that the men found to be disqualified for military service by the examining physicians of the local draft boards should receive definite instructions as to the meaning of their disabilities and that a strong appeal be made to them to correct these disabilities as far as possible. But the object of this measure is not only to reclaim men for military service or for such service as they can perform, but to lessen the burden of illness and disability among those engaged in essential industrial work. It is hoped that the instruction in this circular, which is really a primer of the physical defects of the nation, will reach far beyond the draft board and be utilized by all agencies interested in improving the public health to instruct the people with regard to their physical deficiencies and the ways and means by which they can be remedied."

According to the U. S. Public Health Service experience everywhere shows that the proportion of persons with physical impairments is considerably greater in persons between 30 and 40 than in those between 20 and 30 years of age. This waning vitality at ages over 30, so commonly accepted as inevitable, can be postponed to a large extent. In this connection, it is pointed out that 60 per cent. of the physical defects found in the last draft were of a preventable or curable nature.

In addition to furnishing all the local draft boards throughout the country with a sufficient number of circulars to supply one to each registrant rejected because of physical disability, arrangements have been made to furnish specimens of the circular to life insurance companies, fraternal organizations, labor unions, employers of labor and others who desire to reprint the circular in its present official form for wider distribution.

"The U. S. Public Health Service will be glad to furnish specimens of this circular on application and urges all organizations that can reach large groups of people to reprint and distribute the circular and thus contribute materially to the public welfare and the national defense."

The circular issued by the U. S. Public Health Service is entitled "Information for Guidance and Assistance of Registrants Disqualified for Active Military Service Because of Physical Defects." It is a four-page leaflet, containing specific information relating to the commoner causes of rejection or deferred classification, *e.g.*, Defective Eyesight, Teeth and Disease, Feet, Underweight, Overweight, Hernia, Hemorrhoids, Varicocele, Varicose Veins, Bladder, Kidney and Urinary Disorders, Ear Trouble, Heart Affections, High Blood Pressure, Lung Trouble, Rheumatism, Venereal Disease, Alcohol, Nervous and Mental Disease, and Miscellaneous Conditions. The information is presented in simple form and has been approved by the highest medical authorities. At the end is a striking quotation from President Wilson, "It is not an Army we must shape and train for war; it is a Nation." This is followed by the following personal appeals:

"Do not go through life with handicaps that may be easily removed. Do not shorten your life, reduce your earning capacity and capacity for enjoying life, by neglecting your bodily condition."

"While other men are cheerfully facing death for the cause of democracy, do not shrink from facing a little trouble and exposure to make yourself strong, healthy and fit."

Over a million copies of the leaflet have been sent out to the draft boards. Requests for specimen copies should be addressed to the U. S. Public Health Service, Washington, D. C.

Correspondence.

CLINICAL NOTES ON INFLUENZA.

Boston, October 1, 1918.

Mr. Editor:

I wish to submit the following clinical notes in the cases of influenza. In a marked case of influenza one is impressed by redness or flushing of the central parts of the face. This flushing is distributed on the lower parts of the cheeks, lower part of nose, a little on lower part of forehead, central part of upper lip and chin.

Often a patient presents himself with a normal pulse, a temperature below 98° F., and very slight symptoms of influenza. These may be only headaches, fatigue or chilliness. One is at a loss to know whether this patient is nervous or fatigued. In this abortive or ambulatory type of influenza I have observed marked redness to slight flushing of the lower half of the uvula, associated with edema. When this sign is present I treat them as cases of influenza and keep them strictly in bed until all symptoms have disappeared. This sign is not present in cases where there has been fever for two or three days.

A fact of interest in the treatment of the disease in my experience has been the different value of phenacetine and aspirin as regards adults and children. Adults react very favorably to phenacetine and caffeine citrate, while children react very favorably to aspirin and sodium bicarbonate. This point in therapeutics may well be related to the milder result of infection in children.

Very truly yours,
SAMUEL W. MYERS, M.D.,
34 McLean St., Boston.

HEARING TESTS.

Boston, September 30, 1918.

Mr. Editor:—

In the JOURNAL of September 26, 1918, Capt. Callahan established a law on registration of stimuli of different intensity in the brain, and applied the same to hearing as the basis of a hearing test. While the law may hold true in sensations of only one nerve center and in the absence of volition and concentration, such as pain, emotions, and other psychical conditions, the writer does not believe it to be valid in other sensations, such as hearing.

The fact that the person with normal hearing in one ear and defective hearing in the other, or defective hearing of different degrees in both ears, can hear whispered voice sound at a given distance and a tuning-fork for a given number of seconds with both ears alike, proves the fallacy of the application of the law to hearing as, in this case, the two stimuli of different intensity are registered simultaneously in the brain; for, in spite of the fact that the pitch, intensity and quality of the sound were equal so far as the vibrations were concerned, up to the drum membrane, it certainly varied from there on through the entire conductive apparatus on account of the different pathological condition. The Captain can try it out on his present apparatus, or his seventy-five cent one, if he believes that he is testing the air conduction by applying a tuning-fork to the tube.

What we are actually concerned in is to know how much hearing there is in a given ear where concentration plays a great rôle; and, after all, the tuning-fork gives us the most accurate information. A person may not hear very well simply because he does not pay attention. We wish to know how much hearing there is in the ear at a time when the subject concentrates all his efforts on hearing, as in the army in obeying the orders of his superiors.

Might the Captain be asked to explain his Test No. 2? The writer does not understand it: there seems to be a lack of intelligence in the subject examined.

It seems, so far, that the test of hearing and bone conduction through the walls of my instrument appears to be the most plausible method of detecting malingering: and one is certainly justified in using a legitimate, scientific and skilful method against illegitimate trickery of a patient.

Yours truly,
JOSEPH PRENN, M.D.

ANESTHETIC TECHNICIANS.

New York, October 1, 1918.

Mr. Editor:—

A gradually increasing misconception of the art of anesthesia has led to a rather unique condition of affairs.

We find that nurses and other lay persons may, by the simple acquisition of a few rules, become anesthetists. Large institutions have adopted the nurse anesthetist upon grounds of economy, expediency and even sentimentality. It is argued that these workers can be employed at little expense, that the supply meets the demand and that the feminine element eliminates fear and works for smoothness during the induction of the anesthesia.

These institutions may employ lay persons to take their x-ray pictures and to make urinary, blood or sputum examinations, but does anyone dream of speaking of these workers as the hospital Roentgenologists or the attending pathologist? They are employed as technicians. The nurse who administers an

anesthetic is an anesthetic technician. She can never be more without a medical degree, for in order to understand the language of anesthesia, one must have intimate aquaintance with anatomy, physiology, medicine, surgery, diagnosis, psychology and special branches.

The nurse who, in discussion with a medical man, attempts to defend a theory relating to anesthesia cannot fail to feel the presumption of it and, if graced with wit, to see the absurdity of such a position. Yet it has actually come to pass that medical men have suffered themselves to be instructed by a nurse in the theory and practice of anesthesia.

In justice to an important branch of surgery and to our medical confrères who devote their training and their energy to its development, let us drop the term "anesthetist" as applied to its non-medical workers and adopt the term "anesthetic technician."

PALUEL J. FLAGG.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY.—The Censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library, 8 The Fenway, Thursday, November 7, 1918, at 4 o'clock.

Candidates should make personal application to the Secretary and present their medical diploma at least one week before the examination.

GEORGE R. MINOT, *Secretary*.

ESSEX NORTH DISTRICT MEDICAL SOCIETY.—The Censors with meet to examine candidates on Thursday, Nov. 7, 1918.

BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY.—In accord with the request of the Health Department, the October meeting of the Society will not be held.

DONALD GREGG, M.D., *Secretary*.

RECENT DEATHS.

KENNETH FIELD ALBEE, M.D., died at his home at Weston, September 24, 1918, aged 32 years. Dr. Albee took the degree of Ph.B. at Brown University in 1910, being a Phi Beta Kappa man. In 1914 he was graduated from Harvard Medical School, settled in Weston and the next year joined the Massachusetts Medical Society and the American Medical Association.

PHILIP TOWNSEND BUCKLEY, M.D., died at his home in South Boston, September 19, 1918, of pneumonia. He was born in Boston, September 15, 1856, was educated at the Boston Latin School and Harvard College, where he received the degree of A. B. in 1880. Four years later he took his M.D. at Harvard Medical School and settled in practice in South Boston, joining the Massachusetts Medical Society in 1886. He was a member of the South Boston Medical Society.

WALTER WARREN KINGSBURY, M.D., died at Malden, September 15, 1918, aged 44. He was a graduate of Tufts College Medical School in 1905, and joined the Massachusetts Medical Society the following year.

WALTER IRENAEUS RYDER, M.D., died at South Boston, September 24, 1918, of pneumonia, aged 29 years. Dr. Ryder was a native of Newton, Mass., and a graduate of Tufts College Medical School in the class of 1913. He had been an assistant surgeon in the Navy since the beginning of the war and had been stationed in Maine until recently when he became a member of the Officers' Military School at Cambridge. He had been active in treating the victims of the influenza epidemic and contracted the disease. He is survived by his widow, Dr. Bernadette Marie McWeeny Ryder, and by a brother, Commander Charles F. Ryder, a surgeon in the Navy.

CHARLES ANTHONY ORDWAY, M.D., died at his home in Everett, September 24, 1918, aged 44 years. He was a native of Concord, N. H., where he was born October 11, 1873. Graduating from Dartmouth Medical School in 1896, he settled in Chelmsford and joined the Massachusetts Medical Society that year. In a year or two he moved to Everett, where he had since practised. He was a member of the American Medical Association.

LOUIS MILTON SALVIN, M.D., died at Roxbury, September 25, 1918, aged 31 years. Dr. Salvin was a graduate of Boston University School of Medicine in 1914, and was a Fellow of the Massachusetts Medical Society. He practised laryngology and rhinology and had a Boston office.

CAPT. CHARLES A. STURTEVANT, one of the leading homeopathic physicians in New Hampshire, died on September 23, at Camp Devens, of pneumonia, which developed from influenza. He was a graduate of Boston University and held membership in the American Institute of Homeopathists, the American Medical Association and was President and Secretary of the New Hampshire Homeopathic Medical Society.

DR. FREDERICK L. HILLS, who for seven years prior to July, 1917, was superintendent of the Bangor State Hospital, died in New York. He was 48 years of age, a graduate of the College of Physicians and Surgeons, Columbia University, and, prior to coming to Bangor, was on the staff of the state hospitals at Danvers, Mass., and Concord, N. H., and superintendent of the tuberculosis sanitarium at Rutland, Mass.

DR. FRANK T. MARA, Holy Cross, '86, and Harvard Medical School, '90, died at St. Elizabeth's Hospital recently after a week's illness with influenza. He had been administering to the wants of the poor up to the time of his going to the hospital.

DR. H. A. HANDS of North Cambridge, died before medical aid could reach him, while visiting a patient in West Somerville. He was born in England and came to this country when a young man. He had been practising medicine in Cambridge for the past 36 years.

DR. BERNARD H. WHITNEY died at his home in Dedham, Mass., from pneumonia, following an attack of grippe. He was born in Decatur, Ill., but had lived in Dedham for many years. He was Chairman of the Massachusetts Board of Optometry for several years.

DR. HOMER Z. LEACH died at his home in Gilbertville, Mass., on September 25, from pneumonia, following influenza. He was graduated at Dartmouth Medical School, 1905, and had practised in Gilbertville for 12 years. He was Assistant Medical Examiner of the North Worcester District, a member of the Brookfield Medical Club and of the Order of Masons.

DR. JAMES A. SCANLON died recently at his home in Roxbury.

RALPH EMERSON STEVENS, M.D., died at his home in Marlborough, September 18, 1918, of nephritis and heart disease, aged 50. Dr. Stevens was born in Marlborough, December 2, 1869. After graduating from Harvard Medical School in 1897, he served as house physician at Boston City Hospital. In 1899 he joined the Massachusetts Medical Society. He was a member of the Marlborough Medical and Surgical Society.

ORION VASSAR WELLS, M.D., died at his home in Westford, October 4, 1918, aged 38 years. He was a graduate of Harvard Medical School in the class of 1906, and was a Fellow of the Massachusetts Medical Society.